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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,314	08/17/2001	James Kenneth Aragones	RD-28217	2332

41838 7590 06/21/2007

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EXAMINER	
CRAIG, DWIN M	

ART UNIT	PAPER NUMBER
2123	

MAIL DATE	DELIVERY MODE
06/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/682,314	ARAGONES ET AL.	
	Examiner	Art Unit	
	Dwin M. Craig	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-28,30-43,45-52,54-67,69-76,78-84 and 86-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *See Continuation Sheet* is/are rejected.

7)☒ Claim(s) *3, 7, 11, 14, 17, 21, 24, 28, 32, 35, 38, 41, 43, 48, 52, 56, 59, 62, 65, 67, 72, 76, 80, 84, 88 and 92* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims rejected are 1-7,9-23,25-27,30,31,33,34,36,37,39,40,42,45-47,49-51,54,55,57,58,60,61,63,64,66,69-71,73-75,78,79,81-83,86,87 and 89-91.

DETAILED ACTION

1. Claims 1-7, 9-28, 30-43, 45-52, 54-67, 69-76, 78-84 and 86-92 have been presented for reconsideration based on Applicants' amended claim language and arguments.

Response to Arguments

2. Applicants' arguments presented in the 4/18/2007 responses have been fully considered; the Examiner's response is as follows:

2.1 The Examiner thanks the Applicants' for deleting the word *"ideal"* from the current claim language and hereby holds the previous claim interpretation as moot in view of the current claim language.

2.2 Regarding the objection to the Appeal Brief in the previous Office Action, in view of the current state of prosecution of the instant case, the Examiner will withhold this objection in abeyance pending final disposition of the case.

2.3 Regarding Applicants' response to the 35 U.S.C. 103(a) rejections of claims 1-93; Applicants' argued on page 16 that, *"...the diagnostic system disclosed in Pettigrew is not equivalent or even similar to a system and method for performing baseline modeling as disclosed in the present patent application..."* the Examiner most respectfully traverses Applicants' argument.

The Examiner respectfully points out that by performing a *baseline* of an aircraft engine, as disclosed in the *Pettigrew* and then performing a diagnostics, as also put forward in *Pettigrew* the cited reference is, in fact, modeling the behavior of an engine and then checking or diagnosing the performance of that modeled data. Note in figure 4 item 220 the descriptive text,

"Determine REDD as difference between installed base & as run" here the baseline data, which models the engine when it is performing correctly, is being compared to newly acquired in-flight data from an actual engine, see item # 202 of the same figure, then a diagnostic is performed (see Figure 5 item # 251 "Check Diagnostics Matrix for Area to Repair") which than checks the *validity* of the modeled real world aircraft engine. The Examiner further notes that the baseline model as disclosed in *Pettigrew* is based upon data from a database on aircraft engine data, see Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" teaches the functional equivalent of a engine service database with baseline modeling see also Col. 10 lines 43-67 more specifically "Thermodynamic **models** of the turbine **engine**..."

Applicants' argued further on page 17 of the 4/18/2007 responses that, *"...there is no teaching or even a suggestion in Pettigrew to a model diagnostics component that evaluates the performance of a baseline model..."* the Examiner respectfully traverses Applicants' arguments, clearly in Col. 2 lines 41-53 more specifically, "The present invention utilizes a new and improved method of rationally analyzing the relationship between performance parameter values and internal engine operation...The object of the present invention is to reduce the risk of engine failure through improved diagnostic analysis..." The engine baseline model is changed by the real-time data and then *analyzed* with a diagnostic to see if the *engine data* indicates that the engine is about to fail, therefore the Examiner has applied a reasonable interpretation to Applicants' claims to mean that the modeled engine based on the real-world data is tested to see if the model, as modified, will pass a diagnostic, which is functionally the same as *evaluating the*

performance of the baseline model, therefore the Examiner respectfully maintains the previously applied prior art rejections with the exceptions as hereby noted.

After careful review of the currently applied prior art rejections the following claims are being objected to, claims 3, 7, 11, 14, 17, 21, 24, 28, 32, 25, 38, 41, 43, 48, 52, 56, 59, 62, 65, 67, 72, 76, 80, 84, 88 and 92.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-7 and 9-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

3.1 Regarding claim 1-7 and 9-21, the system claims as presented, more specifically independent claims 1, 9, 15, 18 and 19 are directed towards Functional Descriptive Material "Data Structures" and Computer programs which are non-statutory in the form as presented in the instant application, *see MPEP section 2106.01*.

3.2 More specifically, and using independent claim 1 as an example, the current claim language discloses, *an engine service database*, this claimed element of the system is, in and of itself non-statutory, MPEP section 2106.01 states...

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs, which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works, and a compilation or mere arrangement of data. Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive

material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)(discussing patentable weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

As regards the claimed limitations, *a preprocessor, an engine baseline-modeling component that builds an engine baseline model,* and *a model diagnostics component that evaluates performance*... all of these system components are software modules, the MPEP makes clear that software is not statutory, MPEP 2106.01 states...

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

The *components* as listed in claims 1-7 and 9-21 are all *expressions of programs* and describe a programming module and are therefore not directed towards statutory subject matter. The Examiner notes that if Applicants' system claims were to recite system elements such as a processor and a memory then the claims would be directed towards statutory subject matter.

Amendment is required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 4-6, 9, 10, 12, 13, 15, 16, 18-20, 22, 23, 25-27, 30, 31, 33, 34, 36, 37, 39, 40, 42, 45-47, 49-51, 54, 55, 57, 58, 60, 61, 63, 64, 66, 69-71, 73-75, 78, 79, 81-83, 86, 87 and 89-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,018,069 to Pettigrew in view of U.S. Patent 5,727,128 to Morrison.

4.1 Regarding claim 1, Pettigrew teaches, a system for performing engine baseline modeling, comprising: an engine service database that contains engine data (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" teaches the functional equivalent of a engine service database with baseline modeling see also Col. 10 lines 43-67 more specifically "Thermodynamic **models** of the turbine **engine**..."); wherein the engine baseline model relates engine performance variables as a function of engine operating conditions (Col. 3 lines 16-2, "REDD values are a measure of the deviation between accepted engine parameter curves representing the functional relationships between various turbine engine performance parameters and **actual** engine parameter curves...") and Pettigrew teaches a model diagnostics component that evaluates the

performance of the engine baseline model (Figure 5 # 251 and Col. 2 lines 19-46 more specifically, "...engine diagnostic data...").

However, Pettigrew does not expressly disclose, a preprocessor for processing the data into a predetermined format and an engine baseline-modeling component that builds an engine baseline model from the preprocessed data.

Morrison teaches a preprocessor for processing the engine data into a predetermined format an engine baseline-modeling component that builds an engine baseline model for an engine from the preprocessed data (Col. 2 lines 66-67 and Col. 3 lines 1-8 more specifically, "This **pre-processing** procedure is necessary because measured process data often contains missing values, noise and unexpected upsets caused by different sources within the process." Which teaches the functional equivalent of preprocessing data for baseline modeling).

Pettigrew and Morrison are analogous art because they are both from the same problem solving area of process modeling.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have used the data preprocessing method of Morrison with the base line modeling methods of Pettigrew.

The suggestion for doing so would have been the ensure that any data processed during the base line modeling wouldn't have any noise or erroneous data present so that further processing does not generate results that lead to a deterioration of the product being produced using the process, see Morrison Col. 1 lines 43-60 more specifically, "...before the product actually produced by those process begins to deteriorate".

Therefore, it would have been obvious to combine Morrison with Pettigrew to obtain the invention as specified in claims 1, 2, 4-6, 9, 10, 12, 13, 15, 16, 18-20, 22, 23, 25-27, 30, 31, 33, 34, 36, 37, 39, 40, 42, 45-47, 49-51, 54, 55, 57, 58, 60, 61, 63, 64, 66, 69-71, 73-75, 78, 79, 81-83, 86, 87 and 89-91.

4.2 Regarding claim 2, Pettigrew teaches extracting data from an engine database, (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" teaches the functional equivalent of a engine service database with baseline modeling).

However, Pettigrew does not expressly disclose preprocessing data to create *Ideal* data.

Morrison discloses preprocessing data (Col. 3 lines 1-8 more specifically, "This **pre-processing** procedure is necessary because measured process data often contains missing values, noise and unexpected upsets caused by different sources within the process.")

4.3 Regarding claim 4, Pettigrew does not expressly disclose segmenting the engine data into a plurality of groups but it does teach engine data (Figure 4 # 202).

However, Morrison discloses segmenting data into a plurality of groups (Figure 3, TEMP, PRESSURE, FLOW, etc and the descriptive text, more specifically Col. 7 lines 34-48 the different data files are functionally the same as different groups).

4.4 Regarding claim 5, Pettigrew does not expressly disclose a regression model.

However Morrison teaches a regression model (Figure 5 # 114 and 116 and Col. 5 lines 60-67 and Col. 6 lines 1-9, more specifically, "...the system implements a regression analysis on the set of potential model...").

4.5 Regarding claim 6, Pettigrew teaches baseline modeling of engine data with metrics (Figure 4 and the descriptive text).

However, Pettigrew does not expressly disclose validating the model.

Morrison teaches a method of selecting input variables or a process model, (Col. 5 lines 60-67 and Col. 6 lines 1-9) which is functionally the same a performing a *pre-validation* of variables that are then put into a model, further validation of models is well known in the simulation/modeling art, see Col. 1 lines 38-50 of U.S. Patent 5,197,127, "Typically simulations are performed to validate analytic models..." thus, it would have been obvious, to an artisan of ordinary skill, at the time of the invention, to have taken the express teachings of Morrison as regards validating the inputs of a model and then derive the express teachings in the instant claims as disclosed.

4.6 Regarding claim 9, the rejection of claim 1 substantially meets all of the claimed limitations in independent claim 9.

4.7 Regarding claim 10, Pettigrew teaches the functional equivalent of extracting data from and engine service database (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" teaches the functional equivalent of a engine service database with baseline modeling).

4.8 Regarding claim 12, see the rejection of claim 4 above.

4.9 Regarding claim 13, see the rejection of claim 6 above.

4.10 Regarding claim 15, the rejection of claim 1 substantially meets all of the claimed limitations in independent claim 9 with the exception of the following limitation:

"...builds an engine baseline model for an engine from the preprocessed data using a regression analysis..."

Pettigrew does not expressly disclose performing a regression analysis.

However Morrison teaches a regression model (Figure 5 # 114 and 116 and Col. 5 lines 60-67 and Col. 6 lines 1-9, more specifically, "...the system implements a **regression analysis** on the set of potential model...").

4.11 Regarding claim 16, see the rejection of claim 6 above.

4.12 Regarding claim 18, Pettigrew teaches a system for performing engine baseline modeling of an aircraft engine (Figure 4 and the descriptive text more specifically reference # 212, 214 & 216 and Col. 1 lines 20-22 "...**aircraft** turbine **engine**..." and Col. 3 lines 55-67 more specifically "...with stored standard performance **baselines** representing **engines** in good condition..."), comprising: an engine service database that contains aircraft engine data; (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" and Col. 2 lines 19-46 more specifically "...engine **diagnostic** data...") wherein the method corrects the aircraft engine data to standard conditions derived for an aircraft engine (Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition"); an engine baseline modeling component that builds an engine baseline model and a model diagnostics component that evaluates the performance of the of the engine baseline model (Col. 2 lines 19-46 more specifically "...troubleshoot and diagnoses the turbine engine..." and "...engine **diagnostic** data..." and).

However, Pettigrew does not expressly disclose a preprocessor for processing the aircraft engine data into a predetermined format and creating *Ideal* data and using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions, and the engine baseline modeling component comprising a metric component to validate the engine baseline model.

Morrison substantially teaches or suggests, a preprocessor for processing the aircraft engine data into a predetermined format (Col. 2 lines 66-67 and Col. 3 lines 1-8 more specifically, "This **pre-processing** procedure is necessary because measured process data often contains missing values, noise and unexpected upsets caused by different sources within the process." Which teaches the functional equivalent of preprocessing data for baseline modeling) and using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions (Figure 5 # 114 and 116 and Col. 5 lines 60-67 and Col. 6 lines 1-9, more specifically, "...the system implements a **regression analysis** on the set of potential model..."), and the engine baseline modeling component comprising a metric component to validate the engine baseline model (Morrison teaches a method of selecting input variables or a process model, Col. 5 lines 60-67 and Col. 6 lines 1-9, which is functionally the same a performing a *pre-validation* of variables that are then put into a model, further validation of models is well known in the simulation/modeling art, see Col. 1 lines 38-50 of U.S. Patent 5,197,127, "*Typically* simulations are performed to validate analytic models..." thus, it would have been obvious, to an artisan of ordinary skill, at the time of the invention, to have taken the express teachings of Morrison as regards validating the inputs of a model and then derive the express teachings in the instant claims as disclosed.)

4.13 Regarding claim 19, see the rejection of claim 1 above.

4.14 Regarding claim 20, see the rejection of claim 6 above.

4.15 Regarding claim 22 Pettigrew teaches, a method for performing engine baseline modeling (Figure 4 and the descriptive text more specifically reference # 212, 214 & 216 and Col. 1 lines 20-22 "...**aircraft** turbine **engine**..." and Col. 3 lines 55-67 more specifically "...with stored standard performance **baselines** representing **engines** in good condition..."), comprising: storing engine data (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" and Col. 2 lines 19-46 more specifically "...engine **diagnostic** data..."); wherein the engine baseline model relates engine performance variables as a function of engine operating conditions (Col. 3 lines 16-2, "REDD values are a measure of the deviation between accepted engine parameter curves representing the functional relationships between various turbine engine performance parameters and **actual** engine parameter curves..." i.e. from actual operating conditions see also Col. 10 lines 35-43 more specifically "The in-flight data is a sample of data obtained during routine operation of the aircraft...").

However Pettigrew does not expressly disclose, preprocessing the engine data into a predetermined format and thus creating data; and building an engine baseline model from the preprocessed data.

Morrison substantially teaches or suggests, preprocessing the engine data into a predetermined format; and building an engine baseline model from the preprocessed data (Col. 2 lines 66-67 and Col. 3 lines 1-8 more specifically, "This **pre-processing** procedure is necessary because measured process data often contains missing values, noise and unexpected upsets

caused by different sources within the process." Which teaches the functional equivalent of preprocessing data for baseline modeling).

4.16 Regarding claim 23, Pettigrew teaches the functional equivalent of an engine service database (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" and Col. 2 lines 19-46 more specifically "...engine **diagnostic** data...").

4.17 Regarding claim 25, see the rejection of claim 4 above.

4.18 Regarding claim 26, see the rejection of claim 5 above.

4.19 Regarding claim 27, see the rejection of claim 6 above.

4.20 Regarding claim 30, the rejection of claim 18 substantially teaches a rejection of this claim with the exception of the following limitation:

"evaluating the performance of the engine baseline model"

Pettigrew teaches evaluation of the engine baseline model (Figure 3 and the descriptive text and Col. 11 lines 8-23).

4.21 Regarding claim 31, see the rejection of claim 23 above.

4.22 Regarding claim 33, see the rejection of claim 4 above.

4.23 Regarding claim 34, see the rejection of claim 6 above.

4.24 Regarding claim 36, see the rejection of claim 30 above.

4.25 Regarding claim 37, see the rejection of claim 6 above.

4.26 Regarding claim 39, see the rejection of claim 18 above, which substantially teaches all of the limitations of independent claim 39 except for the following:

"validating the engine baseline model"

Morrison teaches a method of selecting input variables or a process model, Col. 5 lines 60-67 and Col. 6 lines 1-9, which is functionally the same a performing a *pre-validation* of variables that are then put into a model, further validation of models is well known in the simulation/modeling art, see Col. 1 lines 38-50 of U.S. Patent 5,197,127, "*Typically* simulations are performed to validate analytic models..." thus, it would have been obvious, to an artisan of ordinary skill, at the time of the invention, to have taken the express teachings of Morrison as regards validating the inputs of a model and then derive the express teachings in the instant claims as disclosed.

4.27 Regarding claim 40, the rejection of claim 22 substantially discloses the teachings of the claim with the exception of the teaching concerning, *presenting a user with aircraft data through a user interface.*

Pettigrew discloses, *presenting a user with aircraft data through a user interface* (Figure 2 reference(s) # 120, 118, 118, 122, 116 and the descriptive text and Figure 3 and Col. 10 lines 5-42 and Col. 11 lines 8-58).

4.28 Regarding claim 42, see the rejection of claim 6 above.

4.29 Regarding claim 45, Pettigrew teaches displaying results to a user (Figure 3 and Col. 11 lines 8-23 and Figure 2 #'s 112, 118, 122, 120 and 116 and the descriptive text).

4.30 Regarding claim 46, see the rejection of claim 30 above.

4.31 Regarding claim 47, see the rejection of claim 31 above.

4.32 Regarding claim 49, see the rejection of claim 33 above.

4.33 Regarding claim 50, see the rejection of claim 26 above.

4.34 Regarding claim 51, see the rejection of claim 34 above.

4.35 Regarding claim 54, see the rejection of claim 36 above.

4.36 Regarding claim 55, Pettigrew teaches the functional equivalent of an engine service database (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" and Col. 2 lines 19-46 more specifically "...engine **diagnostic** data...").

4.37 Regarding claim 57, see the rejection of claim 4 above.

4.38 Regarding claim 58, Pettigrew does not expressly disclose validation of baseline models. However, Morrison teaches a method of selecting input variables or a process model, Col. 5 lines 60-67 and Col. 6 lines 1-9, which is functionally the same a performing a *pre-validation* of variables that are then put into a model, further validation of models is well known in the simulation/modeling art, see Col. 1 lines 38-50 of U.S. Patent 5,197,127, "*Typically* simulations are performed to validate analytic models..." thus, it would have been obvious, to an artisan of ordinary skill, at the time of the invention, to have taken the express teachings of Morrison as regards validating the inputs of a model and then derive the express teachings in the instant claims as disclosed.

4.39 Regarding claim 60, see the rejection of claim 36 above.

4.40 Regarding claim 61, see the rejection of claim 37 above.

4.41 Regarding claim 63, see the rejection of claim 39 above.

4.42 Regarding claim 64, see the rejection of claim 40 above.

4.43 Regarding claim 66, see the rejection of claim 42 above.

4.44 Regarding claim 69, see the rejection of claim 45 above.

4.45 Regarding claim 70, see the rejection of claim 1 above.

4.46 Regarding claim 71, Pettigrew teaches the functional equivalent of an engine service database (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" and Col. 2 lines 19-46 more specifically "...engine **diagnostic** data...").

4.47 Regarding claim 73, see the rejection of claim 4 above.

4.48 Regarding claim 74, see the rejection of claim 5 above.

4.49 Regarding claim 75, see the rejection of claim 6 above.

4.50 Regarding claim 78, see the rejection of claim 9 above.

4.51 Regarding claim 79, Pettigrew teaches the functional equivalent extraction of data from an engine service database (Col. 4 line 39 "...a ground computer **database**" and Col. 3 lines 60-61, "...with stored standard performance **baselines** representing engines in good condition" and Col. 2 lines 19-46 more specifically "...engine **diagnostic** data...").

4.52 Regarding claim 81, see the rejection of claim 12 above.

4.53 Regarding claim 82, see the rejection of claim 9 above.

4.54 Regarding claim 83, see the rejection of claim 13 above.

4.55 Regarding claim 86, see the rejection of claim 22.

4.56 Regarding claim 87, see the rejection of claim 23.

4.57 Regarding claim 89, see the rejection of claim 25.

4.58 Regarding claim 90, see the rejection of claim 26.

4.59 Regarding claim 91, see the rejection of claim 27.

Allowable Subject Matter

5. Claims 3, 7, 11, 14, 17, 21, 24, 28, 32, 35, 38, 41, 43, 48, 52, 56, 59, 62, 65, 67, 72, 76, 80, 84, 88 and 92 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5.1 Claims 3, 7, 11, 14 and 21 are rejected under 35 U.S.C. 101 as indicated in this Office Action and pending resolution of the issues regarding statutory subject matter are still not in condition for allowance.

5.2 Reason for indicating allowable subject matter, while Pettigrew teaches engine baseline modeling and Morrison teaches preprocessing of data while modeling, **none of these references taken either alone or in combination with the prior art of record disclose,** scrubbing or cleaning the preprocessed data, or generating rules for cleaning preprocessed data, specifically including:

(claim 3) "...wherein the preprocessor comprises a data scrubbing component that cleans the engine data...",

(claim 11) "...wherein the preprocessor comprises a data scrubbing component that cleans the engine data...",

(claim 24) "...wherein the preprocessing comprises cleaning the engine data...",

(claim 32) "...wherein the preprocessing comprises cleaning engine data...",

(claim 41) "...wherein the preprocessing comprises cleaning the engine data...",

(claim 48) "...wherein the preprocessing comprises instructions for cleaning the engine data...",

(claim 56) "...wherein the preprocessing comprises instructions for cleaning the engine data...",

(claim 65) "...wherein the preprocessing comprises instructions for cleaning the engine data...",

(claim 72) "...wherein the preprocessor comprises a data scrubbing component that cleans the data...",

(claim 80) "...wherein the preprocessor comprises cleaning the process data...",

(claim 88) "...wherein the preprocessor comprises cleaning the process data...",

(claim 7) "...comprises a heuristics component that generates rules for cleaning the preprocessed data...",

(claim 14) "...comprises a heuristics component that generates rules for cleaning the preprocessed data...",

(claim 17) "...comprises a heuristics component that generates rules for cleaning the preprocessed data...",

(claim 21) "...wherein the building means comprises means for generating rules for cleaning the preprocessed data...",

(claim 28) "...further comprising generating rules for cleaning the preprocessed data...",

(claim 35) "...further comprising generating rules for cleaning the preprocessed data...",

(claim 38) "...further comprising generating rules for cleaning the preprocessed data...",

(claim 43) "...further comprising generating rules for cleaning the preprocessed data...",

(claim 52) "...further comprising instructions for generating rules for cleaning the preprocessed data...",

(claim 59) "...further comprising instructions for generating rules for cleaning the preprocessed data...",

(claim 62) "...further comprising instructions for generating rules for cleaning the preprocessed data...",

(claim 67) "...further comprising instructions for generating rules for cleaning the preprocessed data...",

(claim 76) "...wherein the baseline modeling component comprises a heuristics component that generates rules for cleaning the preprocessed data...",

(claim 84) "...further comprising generating rules for cleaning the preprocessed data...",

(claim 88) "...wherein the preprocessing comprises instructions for cleaning the process data...",

(claim 92) "...further comprising generating rules for cleaning the preprocessed data...", **in combination with the remaining elements and features as disclosed in the preceding independent claims.**

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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